CLAIMS

What is claimed is:

1. A method of delivering a data packet from a source node to a destination node connected by several paths, comprising the steps of:

    providing packet queues at the source node, each queue associated with at least one path;

    selecting a packet queue based on local information indicative of the state of paths;

    moving the packet into the selected packet queue; and

    moving the packet from the selected packet queue through one of the at least one path associated with the selected packet queue.

2. The method of Claim 1 wherein the selecting of a packet queue depends on whether there is another packet queue containing less data.

3. The method of Claim 2 wherein the selecting of a packet queue depends on time stamps attached to packets in the queue.

4. The method of Claim 1 wherein the selecting of a packet queue depends on whether the amount of data in the queue is over a limit amount for the queue.

5. The method of Claim 4 wherein the selecting of a packet queue depends on time stamps attached to packets in the queue.

6. The method of Claim 1 wherein the selecting of a packet queue depends on the priority assigned to the queue and the depths of all the queues.

7. The method of Claim 1 wherein the selecting of an emergency packet queue depends on whether the amount of data in non-emergency packet queues is over a limit amount.

8. The method of Claim 1 wherein the selecting of a packet queue depends on time
5   stamps attached to packets in the queue.

9. The method of Claim 1 further comprising

    providing destination packet queues at the destination node;

    attaching to each data packet a destination packet queue identifier;

    placing the packets into the destination packet queues; and

10   after extracting a first packet from its destination packet queue,

extracting a second packet from the destination packet queue identified by the

destination packet queue identifier attached to the first packet.

10. The method of Claim 1 further comprising

    providing destination packet queues at the destination node;

15   before a data packet arrives at the destination node, attaching an epoch

identifier to the data packet; and

    determining that a packet has been lost based on an unexpected change in

the epoch identifier.

11. The method of claim 1 wherein data packets are source routed from the source
20   node.

12. A method of re-sequencing data packets arriving at a node on a network

comprising the steps of:

    providing packet queues at the node;

    attaching to each data packet a queue identifier;

placing the packets into the queues;

after extracting a first packet from its queue, extracting a second packet from the queue identified by the queue identifier attached to the first packet.

13. The method of Claim 12 further comprising associating each output queue with
5   a path through the network to the node from a source node.

14. The method of Claim 11 further comprising

before a data packet arrives at the node, attaching an epoch identifier to the data packet; and

determining that a packet has been lost based on an unexpected change in
10   the epoch identifier.